

# Ocean Bottom Seismometer (OBS) [Marine Seismic Equipment]



## Attention:

Ocean Bottom Seismometer are part of the [Marine Seismic Equipment](#).

Please note that operations with the Seismic Equipment can only be operated upon request. Request operations with the Seismic Equipment to AWI-Geophysics and AWI-Logistics in sufficient time prior to the cruise. The operations of the system require experienced scientific staff on board.

## Summary

Ocean-bottom seismometers (OBS) are used offshore to explore architecture and structure of the earth's crust and mantle, e.g at passive continental margins, subduction zones oder mid-ocean ridges. The registration of earthquakes (seismology) or of artificial sound waves (seismic refraction) yields conclusions about the properties of the subsurface in different depths.



## Contacts

Role	Name
Engineer in Charge	Henning Kirk
Data Scientist	Mechita Schmidt-Aursch

## Components

The OBS is mounted on the vessel, provided with an ballast weight (anchor), and lifted with a crane into the water. After being released from the crane, the OBS sinks freely to the sea floor. The maximum deployment depth ranges between 6000 m and 7300 m depending on the type of construction. On the sea floor, the instrument records ground movements (e.g. earthquakes) with a seismometer and change of water pressure (sound) with a hydrophone. For most longterm deployments, the battery-driven OBS remains about one year on the sea floor, the measured data are recorded meanwhile by a data logger. To stop the measurement, an acoustic signal is sended to the OBS, the anchor weight is released and the OBS ascended due to its floatations back to the surface. An VHF-transmitter, a flashlight and a flag help to locate the OBS. After recovery of the instrument, the seismic data can be retrieved, processed and interpreted. The AWI operates the marine part of the "German Instrument Pool for Amphibian Seismology" (DEPAS, "Deutscher Geräte-Pool für amphibische Seismologie"). This pool is not only used by AWI employees, but it is available for all scientist from German universities or research institutes. Please find further information about the instruments, costs, application procedure, etc. on DEPAS homepage.

## Documentation

- </en/science/geosciences/geophysics/methods-and-tools/ocean-bottom-seismometer/depas.html>
- </en/science/geosciences/geophysics/methods-and-tools/ocean-bottom-seismometer/application.html>